## AMENDMENTS TO THE CLAIMS

1.(Currently Amended) A method of identifying service affecting conditions in the access portion of a network through which a plurality of subscribers are connected to a central point, with a modem at the central point and a modem at the remote point of the connection to each subscriber, the method comprising:

a) obtaining measurements of the electrical characteristics of a subscriber line;

b) obtaining information from a modem connected to the subscriber line concerning the performance of the subscriber line;

c) using in combination the measured electrical characteristics and the information from the modem to identify a service affecting condition.

2.(Original) The method of claim 1 wherein the subscriber line comprises a telephone line carrying DSL service.

3.(Original) The method of claim 2 wherein the DSL service is ADSL.

4.(Original) The method of claim 1 wherein the subscriber line comprises a virtual line created by a connection in a local loop of a cable system.

5.(Currently Amended) The method of claim 1 wherein the modem information is obtained through ~~the MIB~~ a standardized interface of the modem.

6.(Currently Amended) The method of claim 1 wherein the step of using in combination comprises using the measured electrical characteristics ~~are used~~ to determine a reference and the service affecting conditions are identified by comparing the modem information to the reference.

7.(Original) The method of claim 6 wherein the electrical measurements indicate the length of the subscriber line.

8.(Original) The method of claim 7 wherein the modem information provides the bit loading and the reference is selected from a set that includes bit loadings for lines of different lengths.

9.(Original) The method of claim 1 wherein the service affecting condition is a source of interference.

10.(Currently Amended) The method of claim 1 wherein the step of using in combination comprises using the measured electrical characteristics ~~are used~~ to select a reference representing a line without the service affecting condition present.

11.(Original) The method of claim 1 additionally comprising reporting the results of identifying a service affecting condition.

12.(Original) The method of claim 11 wherein reporting includes reporting whether a source of interference is present on the subscriber line.

13.(Original) The method of claim 11 wherein reporting includes reporting on the type of interference source present.

14.(Currently Amended) The method of claim 11 wherein ~~the report is~~ reporting comprises providing a graph of the difference between a reference set of parameters and the measured parameters on the subscriber line.

15.(Original) The method of claim 1 wherein the modem at the central point and the modem and the remote point communicate information by modulating a plurality of tones and the

information concerning the performance of the subscriber line includes a plurality of per-tone pieces of information on the performance of the subscriber line, each piece of information corresponding to one of the tones.

16.(Currently Amended) The method of claim 15 wherein identifying a service affecting condition includes comparing the per-tone performance information and reference per-tone information.

17.(Original) A method of identifying service affecting conditions in the access portion of a network through which a plurality of subscribers are connected to a central point, with a modem at the central point and a modem at the remote point of the connection to each subscriber, the method comprising:

a) obtaining information from a modem connected to the subscriber line concerning the data transmission rate as a function of frequency of the subscriber line;

b) analyzing the data on transmission rate as a function of frequency to determine whether it contains a pattern indicative of a service affecting condition; and

c) identifying a service affecting condition on the subscriber line when a pattern associated with that service affecting condition is identified.

18.(Original) The method of claim 17 wherein the pattern for the same service affecting condition is different for subscriber lines of different lengths.

19.(Original) The method of claim 17 additionally comprising determining the length of the subscriber line and selecting a pattern indicative of a service affecting condition includes selecting a pattern based on the length of the line.

20.(Original) The method of claim 17 wherein the subscriber line is an ADSL line and the length of the ADSL line is estimated from the upstream attenuation obtained from a modem connected to the subscriber line.

21.(Original) The method of claim 17 wherein the service affecting condition is interference.

22.(Original) The method of 21 additionally comprising identifying the source of interference.

23.(Original) The method of claim 17 wherein the subscriber line is an ADSL line and the service affecting condition is selected from a set of conditions that includes an idle T1 circuit in the same cable bundle.

24.(Original) A method of identifying service affecting conditions in the access portion of a network through which a plurality of subscribers are connected to a central point, with a modem at the central point and a modem at the remote point of the connection to each subscriber that communicate by modulating a plurality of tones, the method comprising:

a) obtaining per-tone information from a modem connected to the subscriber line indicating performance of the for each of a plurality of tones;

b) analyzing the per-tone information as a function of frequency to determine whether it contains a pattern indicative of a service affecting condition; and

c) identifying a service affecting condition on the subscriber line when a pattern associated with that service affecting condition is identified.

25.(Original) The method of claim 24 wherein the per-tone information is bit rate per tone.

26.(Original) The method of claim 24 wherein the per-tone information is signal to noise ratio per tone.

27.(Original) The method of claim 24 wherein the per-tone information is attenuation per tone.